Prebiotics and Probiotics Defined
The Food and Drug Administration (FDA) defines a prebiotic as “a non-digestible food ingredient that beneficially affects the host by selectively stimulating the growth and/or activity of one or a limited number of bacteria in the colon, and thus improves host health.”

The FDA defines a probiotic as “a living microorganism which, when administered in adequate amounts, confer health benefits to the host.” These microorganisms are usually bacteria and are sometimes referred to as “healthy”, “friendly”, “good” or “beneficial” bacteria. Probiotics are microorganisms similar to those that naturally exist in the gut. The idea is that in order to stay healthy, we must maintain a delicate balance of microflora (i.e. a mix of different bacteria) in the gastrointestinal tract. That balance can easily be upset if unwanted bacterial populations become predominant in the GI tract.

Balancing Bacterial Flora
A proliferation of harmful bacteria in the gut can rob your body of the essential nutrients it needs by consuming those nutrients that your body would normally absorb. Symptoms of unbalanced bacterial flora include:

- Abdominal pain
- Indigestion
- Bloating
- Food allergies
- Malnutrition

In many cases, good bacteria have a difficult time displacing the unwanted bacteria and require help; this is where prebiotics come into play.

Prebiotics: Benefits and Drawbacks
Prebiotics are generally fibers or starches (e.g., oligosaccharides) that have been shown to be beneficial; however these can have some drawbacks, including:

- Large dosages are required to be effective
- They can cause flatulence
- They are sensitive to their specific environment
- They only work in the colon

PreforPro: A New Generation of Prebiotics
As a result of extensive research, the scientists at Deerland Enzymes have developed a novel prebiotic that supports the growth of healthy bacteria in the gut through a mechanism that is not fiber or starch-based. PreforPro addresses the drawbacks of typical prebiotics on the market; benefits include:

- Efficacious in small doses within hours (not days)
- Functions in both the small and large intestines
- Does not cause flatulence
- Not affected by varying gut environments
- Works with a broad spectrum of probiotic species

PreforPro® supports the growth of beneficial bacteria in the gut through a novel prebiotic that’s not fiber or starch-based, and requires a significantly smaller dosage than typical prebiotics.
PreforPro In Action

In-vitro and in-vivo tests have demonstrated the growth-promoting effect of PreforPro on beneficial bacterial strains of Lactococcus, Lactobacillus, Bifidobacterium and Bacillus subtilis when competing with undesirable bacterial strains. The effects are achieved at small doses within hours, in both the small and large intestine.

Figures 1 & 2 show the difference in growth rate of beneficial Bacillus subtilis and Lactococcus lactis bacteria after the introduction of undesirable E. coli bacteria.

**Figure 1:** B. subtilis anaerobic growth after 5 hours under physiological conditions, competing with E. coli

**Figure 2:** Lactococcus lactis anaerobic growth after 5 hours under physiological conditions, competing with E. coli

**Figure 3:** Bifidobacteria longum colony counts after 48 hours under physiological conditions when competing with E. coli, with the prebiotic inulin compared to PreforPro

**Figure 4:** In-vivo growth of beneficial bacteria, B. longum, when competing with undesirable bacteria, E. coli, in different sections of the gastrointestinal tract of mice that were administered PreforPro

Within a 24-hour time period, the subjects with PreforPro showed a 10-fold bacterial growth increase of B. longum in the ileum, a 100-fold increase in the large intestine and a 40-fold increase in fecal matter, compared to those with B. longum alone.

References:


These statements have not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease.

From concept to commercialization, we add value at every step.*

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